

Reseeding creeping bentgrass following winterkill April 30, 2014

Now is the time to seed. We've waited patiently for signs of life, but now it's time to reseed thin or dead areas. Spring seeding is always more difficult with cold temperatures and competition from weeds. However, we can take several steps to increase the likelihood of seeding success and promote quick recovery.

First, understand why the bentgrass died. In most cases the stand had a significant amount of thatch (Figure 1). This left turfgrass crowns exposed to the desiccating conditions this past winter. Heavily cultivated and topdressed bentgrass, such as golf putting greens, generally survived because the crowns are consistently buried with topdressing sand. Frequent cultivation and in-season topdressing are the best way to help prevent desiccation injury during winter. Sometimes the exposed turf and desiccating conditions cause turf to die regardless of management and we need to reseed in the spring.

A research putting green at the John Seaton Anderson Turf Center was completely killed this winter (Figure 2). We've summarized the best management practices to promote bentgrass establishment below:

- 1) Prep the area – aggressively aerate and topdress to remove as much thatch as possible. Aggressive vertical mowing can help remove organic matter from larger areas such as tees or fairways, but wider bladed machines will improve seed-to-soil contact over typical greens-type vertical mowing units..
- 2) Use a seeder to promote seed-to-soil contact. We used a Turfco TriWave (Figure 3) to reseed our research green. The Triwave was set to 3/8" depth and calibrated to seed creeping bentgrass at 1 lb/1000 ft². The green was seeded in two directions with a diamond pattern (Figure 4). The surface was then topdressed again and rolled after seeding.
- 3) Consider using a nurse crop such as a blend of fine fescues on golf fairways and tees. Typical seeding rates are 6 lbs fine fescue + 2 lbs creeping bentgrass/1000 ft². The fescue will establish more rapidly and protect bentgrass seedlings during the spring and will naturally thin during the summer. The transition is not obvious and the stand should be almost purely creeping bentgrass by the end of the summer.
- 4) Apply a starter fertilizer at seeding at 1.0 lb P2O5/1000 ft² to increase establishment. Weekly application of nitrate fertilizer will help stimulate germination. Soluble potassium nitrate or ammonium nitrate fertilizer can easily be sprayed over affected areas at 0.1 lb N/1000 ft². This will stimulate growth to recover but not overstimulate the turf prior to summer stress. Avoid high amounts of slow release products that will have a limited impact in the short term.
- 5) Covers, such as permeable Green Jacket covers, increased germination on our research green if soils are still cold (Figure 5). Even clear plastic sheeting with holes punched on 2 inch centers and high rates of pigments such as Foursome (6-8x labeled rate) increased soil temperature and germination. Leave covers on during the day to increase soil temperature and stimulate regrowth (Figure 6). Remove covers after germination. However, now that daytime air temperatures are forecasted in the 70'sF, germination covers will not be as effective for increasing germination.
- 6) Keep the seeds moist and raise mowing heights on greens. Recovery needs to supersede green speed. Our first mowing was at 0.180" with a Toro Greensmaster 1000 with a smooth front roller. The mowing will cause the seedlings to mature and promote new tillers.
- 7) Topdress lightly to bury dead tissue and provide a smooth surface. Avoid dragging large amounts of sand which can damage the new seedlings. Kiln-dried sand works well because it doesn't need to be dragged in when applied lightly and frequently.

The research green at our turf research center was seeded on April 4st and is recovering nicely (Figure 7). We've also put a 1 minute video clip highlighting our [Recovery Process](#) and a 15 minute [Winterkill Recovery Webisode](#) on our UNL Turfgrass YouTube channel www.youtube.com/unlturf. There is also information on our website including our [Comprehensive Winterkill Guide](#) and [Golf Winterkill FAQ](#) at <http://turf.unl.edu>.

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Figure 1. Creeping bentgrass with significant amounts of thatch were hardest hit by desiccation this winter



Figure 2. The 18,000 ft² research putting green at the John Seaton Anderson Turf Research Center was killed by desiccation and reseeded on April 4th



Figure 3. Use a seeder to get good seed to soil contact and cut through dead tissue.



Figure 4. Seed in multiple directions. This diamond pattern promotes faster recovery and fill.

Cover Treatment	Crown Soil Temp (F)	Seed Germination (0-3 rating)	Seed Germination (0-3 rating)
	----- 14 Days After Seeding -----		--- 17 DAS ---
Woven Permeable Cover	70b	6.9a	8.4a
4 mil Plastic	79a	5.1b	7.5a
Black Weed Cloth	58d	3.9b	6.6a
Foursome Pigment	63c	1.8c	7.5a
Control	60cd	1.2c	1.5b

Figure 5. The covers and pigment help to increase soil temperature and promoted germination. The permeable Green Jacket cover performed best 14 days after seeding but all treatments were better than the control 17 days after seeding

Seed Germination Scale

- 1 = No visible germination**
- 3 = Limited germination, sporadically down TriWave groove**
- 6 = Moderate germination, majority of TriWave groove**
- 9 = Complete germination, entire TriWave groove full of seedlings**



Figure 6. The covers help increase soil temperature and promoted germination.



Figure 7. Uniform germination 17 days after seeding. The green is now mowed at 0.180" with a solid front roller.